Application of a Buyer Readiness Model to Adoption of Cross-Vertical Initiatives

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Abstract **Gaining vertical and lateral support for adoption of new initiatives can be challenging. As early as the 1970s, marketing principles have been applied beyond the sale of products. We explore the importance of internal marketing for adoption of cross-vertical initiatives and apply Lavidge and Steiner's hierarchy of effects model to an organizational analytics initiative.**

***Index Terms*—social marketing, analytics, cross-vertical, marketing, technology adoption**

I. Introduction

Adoption of new technologies can be difficult for even highly sophisticated and forward-facing organizations. While technology subject matter experts within an enterprise may recognize an initiative's potential to drive competitive advantage, it is typically necessary to secure stakeholder support in order to succeed [1]. When an organization is managed hierarchically, stakeholders may be decision makers or other key personnel in groups of the organization only joined to the championing team through higher levels of the hierarchy due to the initiative crossing the vertical silos of the organization. Without individuals across multiple departments championing the initiative, it can be impossible to acquire the data, funding and personnel resources required to achieve value or improved positioning for organizational change.

Without stakeholder support for initiatives that involve significant cost or change, the prospects of change are grim. Pressure to keep up with competitors' advancements isn't always enough, and studies have indicated that competitive market environments have no noticeable effect on the chances of initiative adoption [2].Studies repeatedly show that there are a wide variety of cultural factors that can affect the success of implementing a new technology, but there is little research to support the fact that it can be accomplished without the sponsorship of stakeholders [3]. For the purpose of this analysis, we have focused on winning stakeholder support as a key tool to success.

Additionally, we have opted to focus primarily on the use of analytics and data science capabilities. A success measure for this could be defined as the "process of developing actionable insights through problem definition...and the application of models and analysis against existing and simulated future data" [4]. While many organizations are making the move towards increased analytics capabilities, many more are hesitant due to the perceived risks associated with any relatively new technology or perceived cost barriers. While there are abundant resources for individuals who choose to address organizational resistance to adoption by presenting case studies and statistics, we've chosen to examine the concept of social marketing as a tool for winning stakeholder support [5].

Social marketing—applying marketing principles to concepts outside of the buying cycle—is not profound or new. In fact, the social psychology principles that serve as the basis for many of the best-known models have been applied outside the realm of marketing and advertising at least since 1971 [5]. This paper seeks to analyze and examine the most useful of these models and suggest means in which it could be applied to winning stakeholder support within an enterprise.

II. Alternate Adoption Models

Many models for an organization's analytical maturity exist. These can help guide a team's approach to championing an analytics initiative. Davenport proposes a model that includes human maturity as part of analytical maturity [6]. Alternately Eckerson proposes an Analytical Maturity Model including Analytical Culture [7].

Davenport's model subdivides Organization into Capabilities, Processes and Strategy. Human maturity is divided into Leadership and Skill Development. Technology is divided into Data Management, Governance, Usage, and Application. Within these, Leadership is the primary focus of gaining adoption. Davenport's approach is to provide a compelling proposition to leadership to adopt an analytics initiative and then use leadership's support to gain the stakeholder support necessary to execute the initiative.

In reality, the existence of leadership support does not necessarily guarantee the success of gaining stakeholder support. In no organization is leadership completely in control, and, in many organizations, they may only be able to influence the general direction. Individual stakeholders are capable of providing weak support or quietly undermining an initiative. Due to this flexibility, simply gaining leadership support should not be the primary method for championing an analytics initiative.

Eckerson's maturity model provides a potentially more effective approach. Analytical Culture is measured as a hierarchy with the analytics initiative progressing from Cost Center, to Tactical Research, to Mission Critical, to Strategic Resource. This hierarchy aligns well with observed realities of the maturation of initiatives within an organization. However, the hierarchy is more closely aligned with the outcomes of implementation of the analytics initiative rather than the initial execution of the stages of the hierarchy. As such, it leaves an opportunity for a hierarchy which provides more insight into how to influence others into supporting the implementation of the initiative.

Both models include critical aspects which are not addressed in this paper. No matter the initiative, if it does not have technical maturity, human capability, or organizational maturity to execute, receiving support to execute will not be enough for the successful completion of the initiative.

That said, support for the initiative must come first. Isson and Harriott propose seven Business Analytics Success Pillars [8]. While they cover many of the technical and procedural requirements, they do not include the support of all stakeholders necessary to begin the other facets of success. Davenport proposes a DELTA model for implementing analytics which, as one element, includes Leadership [6]. While leadership support is critical, the support of other stakeholders is as much if not more so. When leadership support is not directly available, gaining the support of other stakeholders may garner the support of leadership necessary to see the commencement of an analytics initiative. To this end, we propose the application of marketing strategy to the adoption of cross-vertical initiatives such as analytics.

III. Principles of Social Marketing Theory

In traditional sales theory, internal marketing gains its legitimacy through external market orientation. Internal marketing requires a process of learning activity that will incorporate a component of knowledge renewal [9]. Research on social marketing theory has proposed that internal champions can overcome cross-functional restraints by "treating employees as if they were internal customers and valued participants in the creation, circulation, and diffusion of new knowledge" [9]. This concept is based on the idea that a job is a product offered to employees, and it can be extended to the concept that an initiative is an opportunity offered to stakeholders. If you can market a better product to your internal stakeholders, they are more likely to adopt it to the benefit of the organization.

Just as consumers may undergo the development of a relationship with a brand before being prepared for purchase, a similar development of a relationship must occur between an initiative champion and a stakeholder before they can win their support. [9]. This relationship development is mediated between learning activity and knowledge renewal, and will culminate with an exchange of mutual value. In a traditional buyer-seller relationship, the value exchange is more straightforward and will consist of the trade of monetary resources for a needed product or service. When social marketing for initiative adoption, a stakeholder will often trade vocal support and time for use cases and knowledge in hopes of advancing an organization's position.

IV. Marketing Communication Models

In 1961, Robert J. Lavidge and Gary A. Steiner took a new viewpoint for studying advertising, which was to look at its effects and functions. Their research proposed the idea that, while immediate results may most often be utilized to measure efficacy, examining the long-term production is ultimately a better measure [10]. While a decision to purchase a product may feel sudden to a consumer, in most cases she has been preparing for the purchase for some time. This model, named the hierarchy of effects, proposed that purchase decisions encompassed thoughts, motives, and emotion, and required a buyer to pass through certain stages of research and preference before buying conviction [10]. The length of these stages can vary significantly due to a number of factors, including the demographics of the target customer and the costs and benefits of the product.

The seven steps in Lavidge and Steiner's model track changes in buyer awareness, from non-awareness of a product's existence, to preference, conviction, and the ultimate purchase. This hierarchy of effects model remains a highly cited means of applying social psychology research to advertising and marketing. Quantitative studies have also lent support for its methods, particularly the concept that a consumer must like a brand before being ready to make a purchase The names of the stages and associated "behavioral dimension" are illustrated in Table 1.

TABLE I. Stages of Lavidge and Steiner's Hierarchy of Effects

Stage	***Movement Towards purchase***	***Behavioral Dimension***
1	Non-Awareness	Thoughts
2	Awareness	
3	Knowledge	
4	Liking	Emotion
5	Preference	
6	Conviction	Motives
7	Purchase	

Alternative models to Lavidge and Steiner have been proposed, perhaps most notably Jakki Mohr and John R. Nevin's research on communication strategies, which postulated the idea that frequency, direction, modality, and content of persuasive advertising must be changed according to the context of surrounding structure, power, and climate [11] in order to effect sufficient change in thought patterns for emotion. Additional support and research has been published for more contextually based communications by other social psychologists [12].

For the purposes of this analysis, we will rely on Lavidge and Steiner's well-defined hierarchy of effects model to describe the stages teams intending to promote an initiative should understand. In most cases, while initiatives are promoted through central decision making, each stakeholder in an initiative has some degree of autonomy in decision-making about data sharing or lending support. While the efforts to educate can vary significantly according to the individual's background, virtually every stakeholder will require education and dialogue with a subject matter expert. The organization's culture, industry, and health can all affect the chances of an initiative being launched, but the stages between awareness and purchase will most often remain the same.

V. Application of the Hierarchy of Effects to Initiative Adoption

While adoption of any initiative is challenging, for the purpose of this analysis we will focus solely on analytics as a response to increased conversation among big data. While many organizations are considering the adoption of big data capabilities, things like the appointment of a Chief Data Scientist who may champion analytics initiatives are still relatively rare. This leaves the job of championing the initiative to the team which hopes to execute it.

In some cases, organizations may feel satisfied with the status quo of their company's measurement, believing business intelligence capabilities are a sufficient form of measurement. For technically savvy employees within the organization, winning stakeholder support is a crucial move to take analytics to the next level. Viewing the winning of stakeholder support for an initiative like an internal marketing campaign can lead to increased success on the part of analytics champions within an enterprise. For the purpose of this analysis, support is defined as willingness to commit financial, labor, and data resources to an initiative. This may require changes to the functional status quo of the group or organization. If an individual manages to win over permission to undertake a project without the necessary resources, the chances of success are slim.

A. Stage 1: Non-Awareness

As outlined in Table 1, Lavidge et al begin with unawareness. At this initial step, customers are simply unaware that the product even exists. It may be easy for a team attempting to implement an analytics initiative to simply assume that they are beyond this step. However, such a team should contemplate what they are selling and if they are identified with it to stakeholders in their organization.

A team should first ***decide which concepts they are advertising as their product and ensure that those concepts are mentioned in conjunction with their team at every opportunity.*** The 2014 Gartner hype cycle [13] lists many analytics concepts: Big Data, Data Science, Prescriptive Analytics, Complex-Event Processing, Content Analytics, and more. The team may take advantage of the Gartner hype cycle to build on the existing momentum for a concept. For example, a team may wish to promote their Data Science or Big Data capability. As both terms are relatively near the top of the hype cycle, a team need not make stakeholders aware of the term, but simply to associate it with the team.

B. Stage 2: Awareness

Even if a team is strongly associated with its analytics concept of choice within the organization, it is very likely that stakeholders within the organization know little more about the concept (for example, Big Data) beyond its name. While this is closer to the sale of the analytics initiative than non-awareness, it still leaves much to be done.

To progress to the next step, the team championing the analytics initiative must ***educate stakeholders on the meaning behind the concepts.*** An approach for accomplishing this is to articulate the output of the initiative. This can be in the form of goods or services. A big data initiative may produce granular demographics of all potential customers. A data science initiative may produce models which forecast employee contentment. To effectively reach the next step, stakeholders need to understand these products in terms they are comfortable with.

Ballantyne proposes a four phase cycle for knowledge renewal within an organization [9]. The cycle includes planned learning activities which lead to emergent knowledge renewal within an organization. This approach is particularly applicable to analytics in which an organization must be very agile to maintain a current working knowledge of the field. Ballantyne's cycle may be especially useful in large organizations where personal interactions are unlikely to spread knowledge efficiently. Instead, diffusion of knowledge through the organization may be necessary to reach all stakeholders.

C. Stage 3: Knowledge

Once stakeholders understand the initiative through the products, the next step is to ***build a positive perception of those products.*** At this point, it is a good idea to learn what the stakeholders value so that those values may be aligned with the proposed products of the analytics initiative. This step is also a good point at which to produce some 'quick wins'. Quick wins may be small products that do not require the resources of a fully supported initiative or they may be more basic forms of analytics which do not require the analysis be implemented to its full potential. Finally, to build positive perception, it may simply be good enough to associate the products with positive concepts without any concrete positive outcomes or potential outcomes.

D. Stage 4: Liking

While it may be easy to obtain stage 4, progress from this point will be significantly harder and require much more planning and effort. For a customer to progress from stage 4 to stage 5, he must develop a preference for the product above all others [10].Very likely this will be the hardest step. The data analytics program must be preferred over all competitors. In reality, it does not have to be the most preferred initiative; it simply needs to be 'above the line,' so to speak. If all initiatives were rank-ordered in priority and a cutoff line drawn at the point at which resources are not available to support the next item on the list, the analytics initiative must be above that line.

To gain this preference, the data analytics initiative must ***serve the needs of the stakeholders and serve them better than all competitors***. Complicating the challenge of servicing the initiative's internal customers is the fact that different stakeholders will likely have different needs and requirements. Analytics maturity models provide a means for developing the capability to meet these varying needs.

Once the needs are understood, the maturity and capability of Davenport's DELTA model will directly influence the initiative's success. A mature team may be able to offer the desired services to more stakeholders than an immature team. Where an immature team may overcommit, a mature team will commit where it can provide the greatest value in comparison to its competition, thereby ensuring its preference.

A common misconception is that simply telling stakeholders about the promise of an initiative will build the needed preference. Another common misconception is that articulating specific dollar savings or gains will win over stakeholders.

Both misconceptions fail to realize that they may not actually service the needs of the stakeholders to whom they hope to sell the initiative. Instead, the initiative must service its stakeholders [14]. This focus on service may influence the structure of the services offered to stakeholders. This approach also necessitates significant listening to the needs of the stakeholders and responding to those needs rather than responding in an unsolicited manner.

Also, preference is not solely objective. Emotional factors play a significant role in successful sales [15]. The Air Force found that their most successful recruiters scored well in Happiness, Empathy, Assertiveness, and Emotional Self Awareness on the Emotional Quotient – Inventory ® test [16]. A good team wishing to develop preference for their analytics initiative will recognize the impact of soft skills on the preference for their initiative. They will work to develop these skills in their team and practice them when interacting with stakeholders.

E. Stage 5: Preferring

Conviction represents the last step before purchase. At this point, stakeholders desire the proposed analytics initiative over all other potential initiatives; however, this does not guarantee the initiative will be undertaken. To reach the final step, the preference must be coupled with a desire to buy [10]. In some cases, this may simply be out of the team championing the initiative's hands. Resources may not be available for any initiatives. There may be a desire to not begin any initiatives for many reasons. Or the potential to defer the initiative may allow complacency in its execution.

To create the "conviction that the purchase would be wise," as Lavidge states, a modicum of urgency may be required. The team may need to ***impress on the stakeholders that the initiative will suffer if not undertaken in the short term***. This may be due to market opportunities, competitors implementing their own analytics initiatives, the availability of resources which will not be accessible in the near future, the ability to only support a limited number of stakeholders or any other reasonable justification. Stakeholders must feel they will lose the initiative they prefer if they do not execute in the short term.

F. Stage 6: Conviction

At this point, the championing of the initiative is done and its realization is out of the hands of the championing team. The stakeholders have the preference and conviction to execute the initiative. The responsibility to transition to stage 7 is a procedural one. During this phase, the team's greatest responsibility is to ***ensure that nothing comes up which procedurally inhibits the actual sale or causes the stakeholders to reconsider previous stages***. By staying engaged during the final sales process, the analytics team can help ensure that all hurdles are cleared and the initiative is executed.

G. Stage 7: Purchase

This step represents the goal of this paper. ***By supporting the analytics initiative, it has effectively been purchased.*** However, there is no 'all sales final' sign for organizational initiatives. At this point the analytics team must execute or see the fruits of their sales efforts go to waste. The practice of execution is outside the scope of this document and is left to others' consideration.

VI. Benefits

The application of Lavidge and Steiner's hierarchy of effects provides significant benefit to any team championing an analytics initiative. For comparison, obtaining support can be likened to boiling water. In potential alternative methods for obtaining support, the team turns up the heat (in and of itself a challenging task) and then is disappointed when the water does not immediately begin to boil. Turning the heat up too much may result in a worse outcome than not turning it on at all. By using a hierarchy of effects, the team may observe as the water slowly transitions from room temperature to a boil. They can likely do this at a set pace and under a lower heat.

By breaking out the task of gaining support into distinct stages, progress can be measured more granularly with successes coming in minor steps. Additional information on the use of the hierarchy for monitoring a marketing campaign is available (Lavidge).

The mapping of the individual hierarchy of effects to the given behavior dimensions also provides an additional avenue to hone the championing of an analytics initiative. While stakeholders are in a stage where *Thoughts* is the primary behavior dimension, champions can appeal with primarily objective information. As stakeholders progress to *Emotion* stages, champions can be confident in utilizing their emotional maturity to continue to make progress towards support of the initiative. This also provides champions the awareness of when they must have developed their capacity to appeal emotionally. Finally, as the stakeholder passes to *Motives*, the champion knows to provide the concrete ability to realize the beginning of the initiative. This allows the champion to time their use of resources appropriately, for example, by not wasting resources on preparing for execution when stakeholders have not progressed past a stage based in *Emotion*.

Finally, the hierarchy brings into stark contrast the importance of service to the stakeholders, both big and small. By seeing that success is not a switch which is simply on or off, they can see that they must build a positive relationship with stakeholders that value their needs. The application of the stages of hierarchy highlights that only through service will any cross-vertical initiative succeed and that, through application and development of a strong relationship, you ultimately vest your stakeholders in your initiative, elevating your analytics capability.

VII. Conclusion

While many individuals within organizations may hope to see their companies achieve analytics maturity in the months to come, their initiatives are far less likely to succeed without the full support of stakeholders within their organization. If technological initiatives are viewed as a social marketing campaign, success may be easier to achieve through structured and strategic communications with stakeholders: peers, subordinates, and superiors. Just as a brand could never expect a consumer to purchase their product without education on its value or uses, initiative champions should engage in the same strategic education to win over support.

We recommend future research in the form of case studies within enterprises undergoing the adoption of analytics, as well as additional qualitative research on communications strategy for winning support. Additionally, we believe that it could prove important to apply more contextually based marketing communication models, such as Mohr and Nevin's research to winning support for analytics among management and within silos.

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